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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,969	03/25/2004	Gregory Steckman	10754-18	7894

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ONDAX, INC.
850 EAST DUARTE ROAD
MONROVIA, CA 91016

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No. 10/809,969	Applicant(s) STECKMAN ET AL.	
	Examiner Martin J. Angebrannt	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/25/04 & 12/15/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 38,42,45,46,48,49,61,62 and 66-73 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Lemaire et al. '341.

Lemaire et al. '341 teach an optical grating which is temperature compensated by the provision of a device 10, which is cylindrical and has the same length as the grating. The materials used are chosen on the basis of their coefficient of thermal expansion (CTE). The inner expansion member may have a low CTE such as SS, INVAR or a ceramic, while the outer expansion member may have a higher CTE, such as aluminum. The primary embodiment decreases the pre-strain (tension) on the grating as the temperature increases. In an alternative embodiment, the pre-strain (tension) is increased with increasing temperature. (4/24-63).

The tubes are held to be spacers with the end caps being plates and attaching means.

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4. Claims 1-5,8-12,19,22-33,38-42,45-49,56 and 59-69 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Sullivan et al. '957.

Sullivan et al. '957 teach with respect to figure 1, an athermal optical fiber device which has Bragg (reflection) gratings formed therein. The formation of aperiodic (chirped) gratings or periodic gratings is disclosed. The use of the reflection gratings in the reflection mode or transmission mode is disclosed (5/20-43). The element taught with respect to figure 1 includes elements with 3 mm diameter, although other diameters can be used to provide strain the optical fiber. The element sleeve (10) and the end cap (28) are made of a low CTE materials such as quartz, glass, silica or a ceramic and the spacer (26) is made of a higher CTE material such as Al. The materials and their length are chosen on the based of the desired CTE for the resulting structure. The curves in figure 2 shows a change of 0.145 pm/degree C. The spacer may be a composite of materials to provide the desired CTE response (7/4-8/33). The use of pre-strain is also disclosed (8/34-57).

The reference does not describe the grating in figure 1 as uniform or chirped, but the examiner holds that one skilled in the art would immediately envision either as there are only two choices presented.

Further, there appear to be multiple spacers in the element.

5. Claims 1-12,19,22-49,56 and 59-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. '957, in view of Glenn et al. '950, Glenn et al. 173 or Laming et al. '829.

Glenn et al. '950 teaches exposing using two beams to recording gratings in optical fibers and is referenced for this in Sullivan et al. '957 at column 5.

Glenn et al. 173 teaches exposing using two beams to recording aperiodic gratings in optical fibers and is referenced for this in Sullivan et al. '957 at column 5.

Laming et al. '829 teach using two beam methods or phase masks for recording gratings in optical fibers (1/1/19-2/6).

To address those embodiments bounded by the claims, but not rendered obvious or anticipated above, the examiner holds that it would have been obvious to one skilled in the art to modify the process of forming the athermal grating of Sullivan et al. '957 by using phase masking or a two beam exposure process as is known in the art from either of Glenn et al. '950, Glenn et al. 173 or Laming et al. '829 with a reasonable expectation of forming the desired grating based upon the direction to these gratings in column 5 of Sullivan et al. '957.

6. Claims 1-12, 19-49 and 56-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. '957, combined with either Glenn et al. '950, Glenn et al. 173 or Laming et al. '829, further in view of Fells et al. '187.

Fells et al. '187 teaches the thermal compensation means shown in figure 6, where load spreading washers spacers 62 are used to compensate for any non-uniformities and may be made of (soft) copper. (10/42-47). The use of glass solder (52) as a bonding means is disclosed. (9/26-67).

To address those embodiments bounded by the claims, but not rendered obvious or anticipated above, the examiner holds that it would have been obvious to one skilled in the art to modify the processes rendered obvious above by the combination of Sullivan et al. '957 with either Glenn et al. '950, Glenn et al. 173 or Laming et al. '829, by adding copper load spreading

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spacers or glass solder between spacers to either bond them together or compensate for non-uniformities in the mating surfaces.

7. Claims 38,39,42,45-50,54 and 55 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Myers et al., '863.

The formation of a fiber based grating by wrapping super Invar materials around the fiber at the either at a high temperature or at a low temperature [0003]. The figure 1 does not seem to be uniform in pitch. The changes in temperature cause the wrapping to squeeze the fiber to prevent radial expansion.

8. Claims 38,39,42 and 45-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al., '863.

To address those embodiments bounded by the claims, but not rendered obvious or anticipated above, the examiner holds that as the effect is achieved in Myers et al. '863 by the mechanical constriction of the fiber by the wound wire, it is clear than the thickness and composition are not critical, provided they are appropriate to wrapping (thin enough to be flexible) and strong enough (sufficient thickness and materials strength) to resist the expansion of the fiber. On this basis, the examiner holds that it would have been obvious to one skilled in the art to use any fiber having the correct CTE to offset the radial expansion of the fiber and that the use wire/fibers with thicknesses having nominal thickness variation and/or of compositional variation would have been obvious to one skilled in the art.

The applicant may provide data to show the criticality or define the claims to exclude the embodiments rendered obvious by Myers et al. '863.

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9. Claims 1-18 and 38-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al., '863, in view of Sullivan et al. '957 combined with Glenn et al. '950, Glenn et al. 173 or Laming et al. '829.

To address those embodiments bounded by the claims, but not rendered obvious or anticipated above, the examiner holds that it would have been obvious to one skilled in the art to modify the process of forming the athermal grating of Myers et al., '863 by using phase masking or a two beam exposure process as is known in the art from either of Glenn et al. '950, Glenn et al. 173 or Laming et al. '829 with a reasonable expectation of forming the desired grating based upon the direction to these gratings in column 5 of Sullivan et al. '957 and further to use this thermal correction for either chirped or continuous gratings based upon the direction within Sullivan et al. '957.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morey et al. '898, Maron et al. '693 and Lin et al. '982 teach the use of tubes for thermal compensation and would be cumulative to the above rejections.

Yao et al. '862 teach the use of heating of periodically wound wires to form gratings in fiber optics.

Engelberth et al. '301, Shigehara et al. '250 and Jin et al. '310 teach thermal compensation means where bentback design is used (bilayer/composite on the straining device and would be cumulative to the above rejections.

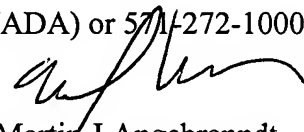
Inuoe et al. '687 teach forming a groove, placing the gratings fiber in it and filling the groove with silicone with respect to figure 29.

Montesanto et al. '891 teach the use of piezoelectric compensation as well as a bend back design.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Martin J Angebranndt
Primary Examiner
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1/5/2007